

Track: Prior Authorization (PAS)

Documentation Template and Coverage Rules (DTR) / Coverage
Requirements Discovery (CRD)



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Introduction to CRD, DTR, and Prior Auth Scenario

Overview

In this scenario we will walk through the full CRD, DTR, and Prior Auth workflow. This will involve the following pieces of technology:

- FHIR® Querying (<https://www.hl7.org/fhir/search.html>)
- CDS Hooks (<https://cds-hooks.org/>)
- SMART App Launch (<http://hl7.org/fhir/smart-app-launch/index.html>)
- CQL (<https://cql.hl7.org/>)

The full implementation guides can be found here:

- Coverage Requirements Discovery (CRD): <https://build.fhir.org/ig/HL7/davinci-crd/>
- Documentation Templates and Rules (DTR): <http://build.fhir.org/ig/HL7/davinci-dtr/>
- Prior Authorization Support (PAS): <https://build.fhir.org/ig/HL7/davinci-pas/>

InterOpathon Challenge

Action: Create an innovative solution encompassing one or more of the following IG's: CRD, DTR, and Prior Auth.

Precondition: Follow and complete the technical walkthrough in this document.

Judging Criteria: The solution is innovative, unique, complex, and improves InterOperability (refer to Judging Criteria for further detail).

Example Innovative Solutions:

CRD CDS Service

- Intelligent medication substitutions
- Intelligent analytics for evaluating documentation requirements
- Fraud detection
- Wellness (incentivise patients to better manage their health)

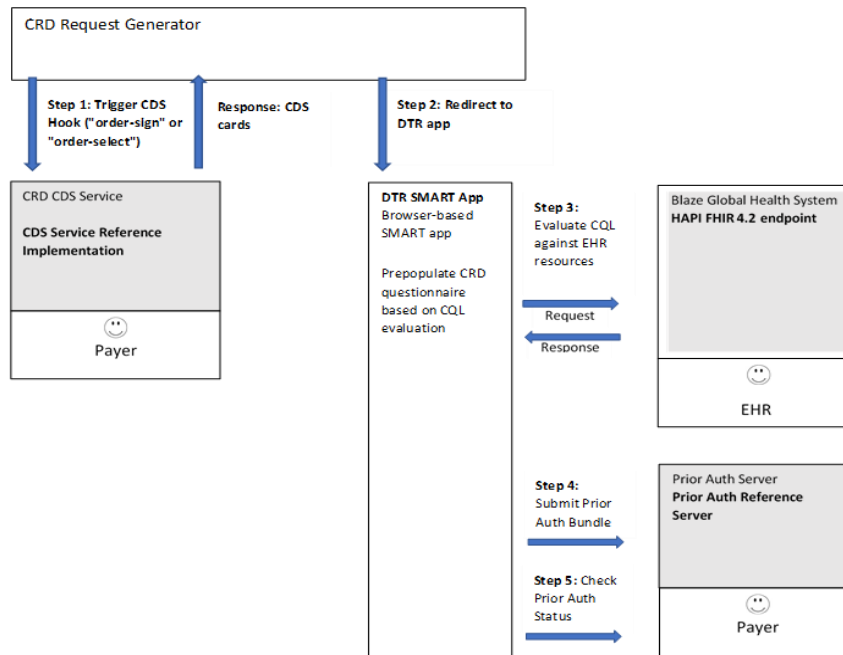
DTR SMART App

- Enhanced documentation gathering experience
- Enhanced payer claim management experience

Prior Auth

- Decision support for processing prior auth requests
- Claim analytics (dashboards, reports, etc.)
- Treatment effectiveness analytics

CRD, DTR, Prior Auth Architecture diagram
End-to-End Scenario



Technical Walkthrough

The following walkthrough will take you through the full prior auth flow. These steps can all be completed using the CRD request generator at `{{base url}}/crd-req-gen/`.

Note: Your base URL will be in the form of <https://xxxx-xxxx.interopland.com> and can be retrieved from the Interoperability Land portal. It will be the same base URL used by all FHIR® endpoints in your assigned sandbox.

Coverage Requirements Discovery (CRD)

CRD allows healthcare providers to proactively discover the coverage requirements for a given drug, device, or procedure, from their patients' insurance payer.

Step 1: Review the CDS Service Discovery document at `{{base url}}/crd/r4/cds-services` and note the prefetch requirements for the different hooks.

```

GET https://xxxxx-xxxxx.interopland.com/crd/r4/cds-services
Status: 200 OK Time: 258 ms Size: 5.95 KB

{
  "services": [
    {
      "id": "order-review-crd",
      "hook": "order-review",
      "title": "order-review Coverage Requirements Discovery",
      "description": "Get information regarding the coverage requirements for durable medical equipment",
      "prefetch": {
        "nutritionOrderBundle": "NutritionOrder? id={
          {context.orders.NutritionOrder.id}}&_include=NutritionOrder:patient&
          _include=NutritionOrder:provider&_include=NutritionOrder:requester&
          _include=PractitionerRole:organization&
          _include=PractitionerRole:practitioner&
        }"
      }
    }
  ]
}

```

Step 2: Assemble the JSON request for the CDS Hook of interest. This will include a “prefetch” element containing a FHIR® bundle with all resources described by the “deviceRequestBundle” prefetch requirement from step 1. You can see examples here: <https://cds-hooks.org/hooks/order-sign/> and here: <https://cds-hooks.org/hooks/order-select/>.

Step 3: Submit the hook request to the desired CDS Service endpoint (i.e. `{{base url}}/crd/r4/cds-services/order-review-crd`) and take note of the returned cards.

```

POST https://xxxxx-xxxxx.interopland.com/crd/r4/cds-services/order-review-crd
Status: 200 OK Time: 1808 ms Size: 4.24 KB

{
  "hookInstance": "d1577c69-dfbc-44ad-ba6d-3e05e953b2ea",
  "fhirServer": "https://xxxxx-xxxxx.interopland.com/blaze-global-health-system/fhir/",
  "hook": "order-review",
  "fhirAuthorization": {},
  "user": "Practitioner/example",
  "context": {
    "patientId": "32",
    "encounterId": "enc89284",
    "orders": {
      "resourceType": "Bundle",
      "entry": [
        {}
      ]
    }
  },
  "prefetch": {
    "deviceRequestBundle": {
      "resourceType": "Bundle",
      "type": "collection",
      "entry": [
        {},
        {},
        {}
      ]
    }
  }
}

{
  "suggestions": null,
  "links": [
    {
      "label": "Documentation Requirements",
      "url": "https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/ProviderComplianceTipsforHospitalBedsandAccessories-ICN909476.pdf",
      "type": "absolute",
      "appContext": null
    },
    {
      "label": "Order Form",
      "url": "http://localhost:3005/launch",
      "type": "smart",
      "appContext": "templateK3DQuestionnaireK2FIOLDevice sK26requestK3D878K5CK22resourceTypeK5 CK22K3AK5CK22DeviceRequestK5CK22K2CK5 CK22idK5CK22K3AK5CK22K25K5CK22K2CK5CK22metaK5CK22K3AK5CK22version1K3K5CK2"
    }
  ],
  "card": {}
}

```

You can also accomplish these steps using the CRD Request Generator by clicking the “Patient Select” button, selecting a patient and device request from the list.

The interface shows a top navigation bar with buttons: EHR Launch, Standalone, r4, and stu3. Below this is a 'Patient Select' dropdown menu currently showing 'N/A'. To the right is a table of patient and device request entries.

Demographics	ID	Name	Gender	Age	Device Request	Service Request
Name: N/A Age: N/A Gender: N/A State: N/A	mrp-out	N/A	N/A	NaN	None	None
Code: N/A System: N/A Display: N/A	32	Stephanie Giles	female	60	337414009	None
	59	Cody Wilkinson	male	64	None	None
	79	Valerie Merritt			None	None

Once you have selected a patient/device request, click the “Submit” button and review the cards displayed.

The interface shows the 'Patient Select' dropdown now set to '32'. The patient details are prefetched and displayed in a table. To the right, a 'Summary' and 'Details' panel is shown.

Demographics	Prefetched
Name: Stephanie Giles	Patient: Patient/32 ✓
Age: 60	DeviceRequest: DeviceRequest/52 ✓
Gender: female	Coverage: Coverage/36 ✓
State: MI	Practitioner: Practitioner/33 ✓
	Organization/35 ✓
Code: 337414009	
System:	
Display: Blood glucose meters (physical object)	

Summary
IOL Devices: Documentation Required.

Details
 Documentation Required, please complete form via Smart App link.

Source: Da Vinci CRD Reference Implementation
[Documentation Requirements](#) [Order Form](#)

Submit

Documentation Templates & Coverage Rules (DTR)

Within the returned coverage requirements there may be information about the payer’s documentation requirements for the specified order. These rules are in the form of a FHIR® Questionnaire resource augmented with CQL. The DTR SMART app is responsible for interpreting those rules, automatically evaluating the embedded CQL within the EHR, and allowing the provider the opportunity to complete any missing information.

```
1 {  
2   "cards": [  
3     {  
4       "summary": "IOL Devices: Documentation Required.",  
5       "detail": "Documentation Required, please complete form via Smart App link.",  
6       "indicator": "info",  
7       "source": {  
8         "label": "Da Vinci CRD Reference Implementation",  
9         "url": null  
10      },  
11      "suggestions": null,  
12      "links": [  
13        {  
14          "label": "Documentation Requirements",  
15          "url": "https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/Downloads/  
ProviderComplianceTipsForHospitalBedsandAccessories-ICN909476.pdf",  
16          "type": "absolute",  
17          "appContext": null  
18        },  
19        {  
20          "label": "Order Form",  
21          "url": "http://localhost:3095/#launch"  
22          "type": "smart",  
23          "appContext": "  
template%3DQuestionnaire%2FIOLDevices%26request%3D%7B%5C%22resourceType%5C%22%3A%5C%22DeviceRequest%5C%22%2C%5C%22id%5C%22%3A%5C%22S%2K%22%2C%5C%22meta%5C%22%3A%7B%5C%22versionId%5C%22%3A%5C%22Z1%5C%22%2C%5C%22lastUpdated%5C%22%3A%5C%222020-05-03T23%3A28%3AA4Z.  
73%3E2B08%3AB08%5C%22%2C%5C%22source%5C%22%3A%5C%22Z23%3Av0eYXopaQh6pFka%5C%22%7D%2C%5C%22text%5C%22%3A%7B%5C%22status%5C%22%3A%5C%22generated%5C%22%3A%5C%22diiv%5C%22%3A%5C%22%3Cdvi+xmlns%3Dxmlns%5C%22http%3A%5C%22F5%3C%22Fww.w3.org%5C%221999%5C%22xhtml%5C%22%3EThis+is+a+simpl  
+narrative+with+only+plain
```

`{{base_url}}/crd/fhir/r4/Questionnaire/HomeOxygenTherapy.`

You can also accomplish these steps using the CRD Request Generator and the DTR SMART App. First, in the IOL portal create a new SMART App under “Blaze Global Health System” and record the client ID.

Blaze Global Health System

All Sandboxes > Anand Prior-Auth > Blaze Global Health System

Overview

Capabilities Statement

SMART Apps

Visualizations

Register

Name

CRD Path

DTR Secret

Register Smart App

Register your SMART app to gain access to Blaze Global Health System.

NAME * Symbols other than +, -, @, - are not permitted.

REDIRECT URI(S) * Add multiple URI(s) by separating addresses with a comma.

Cancel

OK

7

and update the clientId in the launch.js file.

```
6 // you can enter its secret here. The demo app will pretend it's a confidential
7 // app (in reality it cannot be confidential, since it cannot keep secrets in the
8 // browser)
9 var secret = null; // set me, if confidential
10
11 // These parameters will be received at launch time in the URL
12 var serviceUri = urlUtils.getUrlParameter("iss");
13 var launchContextId = urlUtils.getUrlParameter("launch");
14
15 // Change this to the ID of the client that you registered with the SMART on FHIR authorization server.
16 var clientId = "20npureeb7iq6t1m4tcf6im42j"; // local client
17 // clientId = "c7ecff8d-5e91-48f2-b22e-f423c0c4c009"
18 localStorage.setItem("lastAccessedServiceUri", serviceUri);
19 if(storedJSON) {
```

You can also update endpointConfig.json with your prior-auth endpoint.

```
Unsaved changes (cannot determine recent change or authors)
1 {
2   {
3     "name": "IOL Sandbox",
4     "url": "https://xxxxx-xxxxx.interopland.com/prior-auth"
5   },
6   {
7     "name": "Logica Health"
```

Finally, update “target” field in the webpack.config.dev.js.

```
{ from: /register/, to: "/register.html" }
}
},
proxy: [
  {
    context: ["/files", "/fhir", "/crd"],
    target: "https://xxxxx-xxxxx.devinteropland.com",
    changeOrigin: true,
    secure: true
  }
]
```

You can then run the DTR SMART App with the following commands:

```
npm install
npm start
```

Once the DTR App is running, you should be able to click the “Order Form” link in the CRD Request Generator which will take you to the DTR SMART App to fill out the questionnaire. Click the “Next” button to accept the entered values.

Select one or more or type a value	
Order Date	
Order start date, if different from date of order	MM/DD/YYYY
Order date, if different from date of signature	MM/DD/YYYY
Type of order:	Select one
Other	Type a value
Order Description	Type a value
Order	
Equipment	null
Other equipment, accessories, or supplies:	Type a value
Additional description:	Type a value
Signature:	Type a value
Name (Printed):	Mabel B George
Date (MM/DD/YYYY):	05/14/2020
NPI:	9999992568

Save Next

Prior Authorization Support (PAS)

In cases where prior authorization is required for a drug, device, or service referral, PAS enables EHRs to submit that prior authorization request directly to the payer systems.

Step 1: Create a FHIR® bundle that contains a Claim resource that is consistent with the PAS IG, and POST it to the `{{base url}}/prior-auth/Claim/$submit` endpoint. Take note of the returned ClaimResponse identifier and the Patient identifier.

```
POST https://xxxxx-xxxxx.devinteroplant.com/prior-auth/Claim/$submit

{
  "resourceType": "Bundle",
  "type": "collection",
  "entry": [
    {
      "resource": {
        "resourceType": "ClaimResponse",
        "id": "2f40435f-a835-4b7f-8c61-9213b734a5f2",
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/davinci-pas/StructureDefinition/extension-reviewaction",
            "valueString": "M4"
          }
        ]
      }
    }
  ]
}
```

Step 2: Check the status of the prior authorization request using the `{{base url}}/prior-auth/ClaimResponse?identifier=[authorizationresponseid]&patient.identifier=[patientid]&status=active`

```
GET https://xxxxx-xxxxx.devinteroplant.com/prior-auth/ClaimResponse?identifier=e427ae99-4b3b-4aea-89a9-d239e3b6cb7e&patient.identifier=000003009

{
  "resourceType": "Bundle",
  "id": "13bc8456-6c6b-4b7f-b851-fd471948b89b",
  "type": "collection",
  "entry": [
    {
      "resource": {
        "resourceType": "ClaimResponse",
        "id": "13bc8456-6c6b-4b7f-b851-fd471948b89b",
        "extension": [
          {
            "url": "http://hl7.org/fhir/us/davinci-pas/StructureDefinition/extension-reviewaction",
            "valueString": "M4"
          }
        ]
      }
    }
  ]
}
```

From the DTR SMART App, click the Submit button with your prior auth endpoint selected. This will submit the completed prior auth request. Once submitted you will be given options to subscribe to updates.

```
{
  "resourceType": "Bundle",
  "type": "collection",
  "entry": [
    {
      "resource": {
        "resourceType": "Claim",
        "status": "active",
        "type": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/claim-type",
              "code": "professional",
              "display": "Professional"
            }
          ]
        },
        "subType": {
          "coding": [
            {
              "system": "http://terminology.hl7.org/CodeSystem/ex-claimsubtype",
              "code": "HIMSS"
            }
          ]
        }
      }
    }
  ]
}
```

Submit Prior Auth

Select PriorAuth Endpoint:

IOL Sandbox: <https://dev-an90.devinteroplant.com/prior-auth>

Submit

Judging Criteria

IGNITE

Interoperability: APIs and FHIR® Heat Up



Alignment with Track	Helps to improve Inter-operability	Innovation & Creativity	Use of APIs	User Experience	Technical Difficulty	Presentation or Demo
25%	25%	15%	10%	10%	10%	5%
How aligned was the solution with one of the event Tracks?	Does the team clearly show how their solution could be used to improve interoperability?	Did the team create something that has not already been created? Is it unique?	Did the team use APIs available to create a solution?	What is the wow factor? Would others be impressed by what was built? How easy is the solution to use?	Is the project technically impressive / complex? Is it remarkable that a team created this solution in the time allowed?	Was the presentation or demo well put together? Did the team seem prepared? How well did they explain the problem and solution? (only judge on content, not video quality)

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